

From: [Young, Patrick](#)
To: heidi.bojes@dshs.state.tx.us; [Enders, Jhana](#); [Turner, Philip](#); Shaun.May@amarillo.gov
Subject: Fwd: Final Sampling Protocol and Detection level - (b) (6) Street
Date: Friday, January 27, 2017 12:27:43 PM
Attachments: [phosphine IRIS summary 1987.pdf](#)
[ATT00001.htm](#)
[phosphine AEGL tech support document 2007.pdf](#)
[ATT00002.htm](#)
[PHOSPHINE HSDB 2007.docx](#)
[ATT00003.htm](#)

Sent from my iPhone

Begin forwarded message:

From: "Nickle, Richard (ATSDR/DTHHS/OD)" <ran2@cdc.gov>
To: "Young, Patrick" <young.patrick@epa.gov>
Cc: "Pettigrew, George" <pettigrew.george@epa.gov>, "Gillig, Richard (Rick) (ATSDR/DCHI/CB)" <rig4@cdc.gov>, "Holler, James S. (Jim) (ATSDR/DTHHS/OD)" <jsh2@cdc.gov>, "Cseh, Larry (ATSDR/DTHHS/OD)" <loc3@cdc.gov>, "Murray, Ed (ATSDR/DTHHS/OD)" <hem0@cdc.gov>, "Stephens, James W. (ATSDR/DTHHS/OD)" <jws9@cdc.gov>, "Edge, Charles (ATSDR/DTHHS/OD)" <ibd7@cdc.gov>, "Funk, Renee (CDC/ONDIEH/NCEH)" <rjf8@cdc.gov>, "Dieser, Edward (CDC/ONDIEH/NCEH)" <eyn3@cdc.gov>
Subject: FW: Final Sampling Protocol and Detection level - (b) (6) Street

Patrick, your email was forwarded to me for a response as the duty officer this week; Larry, Jim, and I reviewed and discussed the information in the email string. Although we don't have a sampling plan or QAPP, we concur with the sampling method proposed by EPA and the sampling locations suggested by Dr. Miller. Assuming the source of phosphine has been removed, the detection limits and quantification limits should be acceptable. If there is a continuing source for phosphine, those limits are higher than we would like. Let me explain. Attached is the IRIS summary for Phosphine (EPA, 1987; epa.gov/iris); the support document for the EPA AEGL (NAS, 2007; epa.gov/aegl); and the Phosphine record from HSDB (HSDB, 2007; toxnet.nlm.nih.gov).

Phosphine is highly volatile and fairly reactive; the half-life in the open air is about 5 hours (HSDB, 2007). The primary mechanism by which it breaks down in the open air does not apply to indoor air, but other mechanisms may be present. In any case, we would expect the gas to be removed fairly readily from an indoor environment by normal air circulation. If there is a continuing source of phosphine in that indoor setting, then the gas may be replenished.

Without a source, we would be looking at an acute exposure scenario and the AEGL is an appropriate comparison value. The detection and quantification limits

of the method are below the AEGL (NAS 2007) and approximately an order of magnitude below the lowest human LOAEL described in a case study in the HSDB record. The circumstances of the exposure in that case study are not definitely described in HSDB, but the AEGL document has more details.

If a source of phosphine remains available, then the situation becomes a chronic exposure scenario and the EPA RfC is the appropriate comparison value (EPA 1987). The detection limit and quantification limits of the OSHA method are about two orders of magnitude above the RfC; that implies the sample results from this method may not be able to eliminate a potential human health concern.

If the setting for this sampling effort is related to the incident in Amarillo at the end of December/beginning of January when a homeowner applied a restricted use pesticide inappropriately, then we would expect no phosphine detections based on the chemical and physical properties of the gas and the elapsed time. Therefore, if any phosphine is detected in these samples, that would indicate a source is still present in the home. The source may be residual gas trapped in porous materials in the home such as carpets, drapes, upholstery, etc. That source should be identified and removed before resampling.

I hope this helps. If you have any questions, please feel free to contact me.

Richard A. Nickle, MPH

ATSDR Emergency Response

Atlanta, GA

ran2@cdc.gov

770-488-3343 (Office)

404-791-7951 (Mobile)

<!--[if !supportLists]-->770-488-7100<!--[endif]-->(24/7 Emergency)

- Ask for the ATSDR Duty Officer

From: Holler, James S. (Jim) (ATSDR/DTHHS/OD)

Sent: Friday, January 27, 2017 8:59 AM

To: Nickle, Richard (ATSDR/DTHHS/OD) <ran2@cdc.gov>

Subject: FW: Final Sampling Protocol and Detection level - (b) (6) Street

[For review and discussion](#)

From: Holler, James S. (Jim) (ATSDR/DTHHS/OD)

Sent: Friday, January 27, 2017 6:26 AM

To: Cseh, Larry (ATSDR/DTHHS/OD) <loc3@cdc.gov>

Subject: FW: Final Sampling Protocol and Detection level - (b) (6) Street

[For discussion](#)

From: Young, Patrick (CDC epa.gov)

Sent: Thursday, January 26, 2017 3:24 PM

To: Holler, James S. (Jim) (ATSDR/DTHHS/OD) <jsh2@cdc.gov>

Subject: FW: Final Sampling Protocol and Detection level - (b) (6) Street

FYI

From: Bojes, Heidi (DSHS) [<mailto:Heidi.Bojes@dshs.state.tx.us>]

Sent: Thursday, January 26, 2017 2:08 PM

To: Young, Patrick <young.patrick@epa.gov>

Subject: FW: Final Sampling Protocol and Detection level - (b) (6) Street Patrick,

The approach outlined below is what has been being discussed. I don't have the indoor air sampling expertise and I think it would be good to at least get the approach, including the method, reviewed by an expert. If you can find somebody with ATSDR that would be great.

Dr. Milton is the state health authority with the ultimate say.

-Heidi

Heidi Bojes, PhD, MPH

Director, Environmental Epidemiology and Disease Registries Section

Texas Department of State Health Services

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From: Young, Patrick [<mailto:young.patrick@epa.gov>]

Sent: Thursday, January 26, 2017 2:04 PM

To: Bojes, Heidi (DSHS) <Heidi.Bojes@dshs.state.tx.us>

Subject: RE: Final Sampling Protocol and Detection level - (b) (6) Street
So, you and Dr. Milton are the health authorities. You still want us to ask ATSDR Atlanta for guidance? Or will Dr. Milton recommendations suffice?

From: Bojes, Heidi (DSHS) [<mailto:Heidi.Bojes@dshs.state.tx.us>]

Sent: Thursday, January 26, 2017 2:03 PM

To: Young, Patrick <young.patrick@epa.gov>

Subject: FW: Final Sampling Protocol and Detection level - (b) (6) Street
FYI...

Heidi Bojes, PhD, MPH

Director, Environmental Epidemiology and Disease Registries Section

Texas Department of State Health Services

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From: May, Shaun [<mailto:Shaun.May@amarillo.gov>]

Sent: Thursday, January 26, 2017 2:02 PM

To: 'Enders, Jhana' <Enders.Jhana@epa.gov>; Eddy Vance <eddy.vance@tceq.texas.gov>; Chester, BJ <BJ.Chester@amarillo.gov>; Orton,

Chip <Chip.Orton@amarillo.gov>; david.durst@tceq.texas.gov

Cc: Bojes, Heidi (DSHS) <Heidi.Bojes@dshs.state.tx.us>; 'Turner, Philip' <Turner.Philip@epa.gov>; Stoughton, Casie <Casie.Stoughton@amarillo.gov>; Britten, Brad <Brad.Britten@amarillo.gov>; West, Theresa <Theresa.West@amarillo.gov>

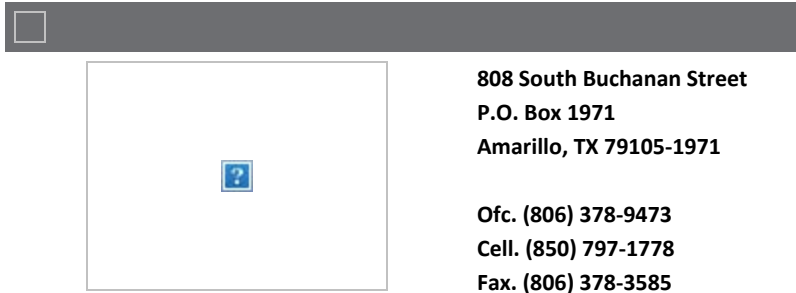
Subject: RE: Final Sampling Protocol and Detection level - (b) (6) Street Jhana, here are the recommendations that Dr. Milton would like to share with Unified Command regarding confirmation sampling:

1) Pull a sample in each room of the house, at 12 inches off the floor as close to the floor vents as possible. Additional samples to be pulled in the HVAC closet.

2) Samples must be pulled only when ambient air is 70 degree F or greater. Please let me know if you have additional questions or concerns.

Thanks

Shaun



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Shaun C. May, M.P.H., R.E.H.S.
Environmental Health Director
Bi-City-County Health District
shaun.may@amarillo.gov

From: Enders, Jhana [<mailto:Enders.Jhana@epa.gov>]

Sent: Wednesday, January 25, 2017 5:25 PM

To: May, Shaun

Subject: RE: Final Sampling Protocol and Detection level - (b) (6) Street Jhana
Thanks Shaun

cid:image003.jpg@01D277DD.18762780



From: May, Shaun [<mailto:Shaun.May@amarillo.gov>]

Sent: Wednesday, January 25, 2017 5:23 PM

To: Enders, Jhana

Cc: Orton, Chip ; eddy.vance@tceq.texas.gov; david.durst@tceq.texas.gov;

Chester, BJ ; Milton, S ; Bojes, Heidi (DSHS) ; Turner, Philip ; Britten, Brad ; West, Theresa ; Stoughton, Casie

Subject: Re: Final Sampling Protocol and Detection level - (b) (6) Street
I see. Ok, I will consult with Dr. Milton.
Shaun

Sent from my iPhone

On Jan 25, 2017, at 5:15 PM, Enders, Jhana <Enders.Jhana@epa.gov> wrote:

We monitored at multiple locations as there was no specific guidance given. Would like a recommendation from the group to ensure we are accurately addressing any concerns you might have. Thanks.

From: May, Shaun [<mailto:Shaun.May@amarillo.gov>]

Sent: Wednesday, January 25, 2017 5:09 PM

To: Enders, Jhana <Enders.Jhana@epa.gov>; Orton, Chip <Chip.Orton@amarillo.gov>; eddy.vance@tceq.texas.gov; david.durst@tceq.texas.gov; Chester, BJ <BJ.Chester@amarillo.gov>

Cc: 'Milton, S' <s.milton@ttuhsc.edu>; Bojes, Heidi (DSHS) <Heidi.Bojes@dshs.state.tx.us>; Turner, Philip <Turner.Philip@epa.gov>; Britten, Brad <Brad.Britten@amarillo.gov>; West, Theresa <Theresa.West@amarillo.gov>; Stoughton, Casie <Casie.Stoughton@amarillo.gov>

Subject: RE: Final Sampling Protocol and Detection level - (b) (6) Street

My assumption is that they would be the same number and the same locations that were used during the air monitoring phase as we are conducting confirmatory sampling. I would certainly defer to any recommendations from Dr. Milton, Dr. Bojes, and Dr. Turner. However, if specific numbers and locations were not used each time during the monitoring phase, then we will need obviously need to determine numbers and locations.
Shaun

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Shaun C. May, M.P.H., R.E.H.S.
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Bi-City-County Health District
shaun.may@amarillo.gov

From: Enders, Jhana [<mailto:Enders.Jhana@epa.gov>]
Sent: Wednesday, January 25, 2017 5:04 PM
To: May, Shaun; Orton, Chip; eddy.vance@tceq.texas.gov; david.durst@tceq.texas.gov; Chester, BJ
Cc: 'Milton, S'; Bojes, Heidi (DSHS); Turner, Philip; Britten, Brad; West, Theresa; Stoughton, Casie
Subject: RE: Final Sampling Protocol and Detection level - (b) (6)
Street
Ok, need just a little more info...how many samples and where do you want them collected from? Thanks.

From: May, Shaun [<mailto:Shaun.May@amarillo.gov>]
Sent: Wednesday, January 25, 2017 2:59 PM
To: Orton, Chip <Chip.Orton@amarillo.gov>; Enders, Jhana <Enders.Jhana@epa.gov>; eddy.vance@tceq.texas.gov; david.durst@tceq.texas.gov; Chester, BJ <BJ.Chester@amarillo.gov>
Cc: 'Milton, S' <s.milton@ttuhsc.edu>; Bojes, Heidi (DSHS) <Heidi.Bojes@dshs.state.tx.us>; Turner, Philip <Turner.Philip@epa.gov>; Britten, Brad <Brad.Britten@amarillo.gov>; West, Theresa <Theresa.West@amarillo.gov>; Stoughton, Casie <Casie.Stoughton@amarillo.gov>
Subject: Final Sampling Protocol and Detection level - (b) (6)
Street

Importance: High

Good morning everyone,

Dr. Milton , myself, Dr. Bojes, and Dr. Turner discussed final confirmation sampling for (b) (6) Street yesterday afternoon. Dr. Bojes and Dr. Turner presented their recommendation for the detection level and methodology for confirmation sampling. Their recommendation to Dr. Milton was to use the OSHA Method 1003 for Phosphine Gas. The detection level for this method is 10 ppb or 13 µg/m³. Dr. Milton has agreed to proceed with the recommendation. Dr. Turner will be coordinating with Jhana and the contractors under her supervision. At this time, we do not have a exact time estimate on the delivery of the sampling cassettes or their arrival on-site here in Amarillo. It is our understanding that Jhana, with support from Dr. Turner, will be overseeing the confirmation sampling protocol.

I have attached a link to the sampling protocol for reference -
<https://www.osha.gov/dts/sltc/methods/mdt/mdt1003/1003.html>

Please let me know if you have any questions or concerns.

Additionally, I have spoken with Dr. Milton and he approves dropping the 24-security detail for the property/home provided that the gate to the property can be locked/secured along with the home being secured/locked.

Thanks

Shaun



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